SAMPLING DESIGN

Another step in planning the design is to identify the target population and select the sample if a census is not desired. The researcher must determine how many people to interview and who they will be; what and how many events to observe; how many records to inspect and which ones. Once the population of interest is determined, the researcher has to decide whether data will be collected from all study units or from some of the units in the population.

A sample is a part or a portion of the target population carefully selected to represent that population. When researchers undertake sampling studies, they are interested in estimating one or more population values and or testing one or more statistical hypothesis. The sampling process must give every person within a target population a known nonzero chance of selection if probability sampling is used. If there is no feasible alternative, a non-profitability approach may be used.

The Nature of Sampling

Most people intuitively understand the idea of sampling. One taste from a drink tells us whether it is sweet or sour. If we select a few employment records out of a complete set, we usually assume our selection reflects the characteristics of the full set. If some of our staff favors a flexible work schedule, we infer that others will also. These examples vary in their representativeness, but each is a sample.

The basic idea of *sampling* is that by selecting some of the elements in a population, we may draw conclusions about the entire population. *A population element* is the subject on which the measurement is being taken. It is the unit of study. For example, each office worker questioned about a flexible work schedule is a population element, and each business account analyzed is an element of an account population. A population is the total collection of elements about which we wish to make some inferences. All office workers in the firm compose a population of interest; all 4,000 files define a population of interest. A census is a count of all the elements in a population. If 4,000 files define the population, a census would obtain information from every one of them.

Why Sample?

The economic advantages of taking a sample rather than a census are massive. Consider the cost of taking a census.

1. Why should we spend thousands of shillings interviewing all 4,000 employees in our company if we can find out what we need to know by asking only a few hundred?

2. Deming argues that the quality of a study is often better with sampling than with a census.

   He suggests, 'Sampling possesses the possibility of better interviewing (testing), more thorough investigation of missing, wrong, or suspicious information. Research findings substantiate this opinion.

3. Sampling also provides much quicker results than does a census. The speed of execution reduces the time between the recognition of a need for information and the availability of that information.
4. Some situations require sampling. When we test the breaking strength of materials, we must destroy them; a census would mean complete destruction of all materials. Sampling is also the only process possible if the population is infinite.
5. In few cases, it would be impossible or dangerous to use whole population, i.e., testing of vaccine for AIDs – could result in death.

The advantages of sampling over census studies are less compelling when the population is small and the variability is high. Two conditions are appropriate for a census study: A census is

1. *Feasible* when the population is small and
2. *Necessary* when the elements are quite different from each other.

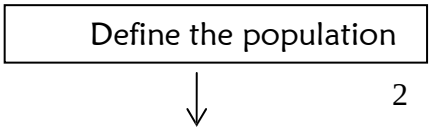
When the population is small and variable, any sample we draw may not be representative of the population from which it is drawn. The resulting values we calculate from the sample are incorrect as estimates of the population values. When the sample is drawn properly, however,

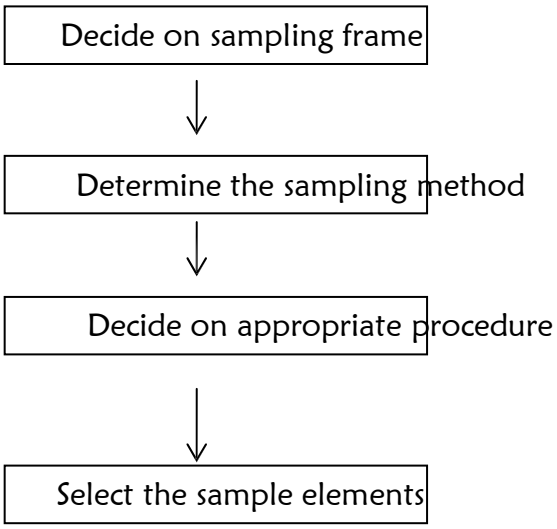
Some sample elements underestimate the parameters and others overestimate them. Variations in these values counteract each other, this counteraction results in a sample value that is generally close to the population value. For these offsetting effects to occur, however, there must be enough members in the sample, and they must be drawn in a way to favor neither overestimation nor underestimation.

Key Steps in the Sampling Procedures

Figure 2.0 outlines the step-by-step procedures that researchers can follow when drawing a sample from a population.

Figure 2.0: The Sampling Procedure





The definition of the population in any study is determined by the purpose of the study. But, the population should be defined very carefully, and in such a manner that another researcher would be able to identify it sufficiently well to reproduce it. The researcher, for example, must specify whether the population consists of individuals such as housewives, college students or lawyers etc.

Secondly, researcher must determine the sampling frame. A sampling frame is the list of study objects from which the sample will be drawn. An ideal sample frame should contain every population object only. Sampling frames can be obtained from research agencies, government departments and organization.

The researcher must next determine the sampling procedure i.e., either probability or non- probability techniques (discussed later).

The researcher must then determine the appropriate sample size. A rule of thumb is that the larger the sample, the more accurate the conclusions drawn are likely to be.

Finally, the researcher then selects the specific study objects to be included in the sample.

Types of Sampling Designs

The members of a sample are selected either on a probability basis or by another means. **Probability sampling** is based on the concept of *random selection – a controlled procedure that assures that each population element is given a known nonzero chance of selection*.

In contrast, **non-probability sampling** is nonrandom and subjective. Each member

does not have a known nonzero chance of being included. Allowing interviewers to choose sample members 'at random' (meaning 'as they wish' or 'wherever they find them') is not random sampling. Only probability samples provide estimates of precision.

Table 1 Type of Sampling Designs

	Representation Basis	
Element Selection	Probability	Nonprobability
Unrestricted	Simple random	Convenience
Restricted	Complex random	Purposive
	Systematic	Judgment
	Cluster	Quota
	Stratified	Snowball
	Multi-stage	

Probability Sampling

The unrestricted, simple random sample is the simplest form of probability sampling. Since all probability samples must provide a known nonzero chance of selection for each population element, the simple random sample is considered a special case in which each population element has a known and equal chance of selection. In this section, we use the simple random sample to build a foundation for understanding sampling procedures and choosing probability samples.

1. Simple Random Sampling

In simple random sampling, all study objects have an equal chance of being included in the sample. Researchers begin with a complete list of all members of a population and then choose

Sample items at random. It should be noted that in simple random sampling, each study object is selected completely independently of other objects.

The sampling process involves assigning a unique identification number to each study object in the sampling frame. After this, the researcher must design a method of selecting study objects in a manner that allows all equal chance of being selected. One way of doing this is writing these identification numbers on small pieces of paper, mixing them thoroughly in a box, and then picking the papers without looking. The numbers on the pieces of paper picked identify the study objects to be included in the sample. In some cases, however, this procedure (lottery method) may be impractical or tedious.

Another procedure used in selecting study objects in simple random sampling involves the use of tables of random numbers. The researcher begins picking randomly objects from any preselected place in the table of random numbers. Then s/he systematically chooses numbers by either moving vertically or horizontally. The sample will therefore consist of the study objects whose numbers are chosen.

Complex probability Sampling

Simple random sampling is often impractical. It requires a population list that is often not Available. The design may also be wasteful because it fails to use all the information about a population. In addition, the carrying out of a simple random design may be expensive in time and money. These problems have led to the development of alternative designs that are superior to the simple random design in statistical and/or economic efficiency.

A more efficient sample in a statistical sense is one that provides a given precision (standard error of the mean) with a smaller sample size. A sample that is economically more efficient is one that provides a desired precision at a lower dollar cost. We achieve this with designs that enable us to lower the costs of data collecting, usually through reduced travel expense and interviewer time.

In the discussion that follows, four alternative probability sampling approaches are considered:
Systematic, stratified, cluster and multi-stage.

2.Systematic Sampling

This method is frequently used in production and quality control sampling. In this approach, every n'th element in the population is sampled, beginning with a random start of an element in the range of 1 to n. After a randomly selected start point(s) a sample item would be selected every n'th item. Assume that in an assembly line it was decided to sample every 100^{th} item and a start point of 67 was chosen randomly, the sample would be the following items:
67^{th}; 167th; 267^{th}; 367^{th};
and so on
The gap between selections is known as the *sampling interval* and is itself often randomly selected.
A concern with this technique is the possible periodicity in the population that may coincide with the sampling interval and cause bias.

3. Stratified Sampling

Most populations can be segregated into several mutually exclusive sub-populations,

or strata. Thus, the process by which the sample is constrained to include elements from each of the segments is called *stratified random sampling*.

There are three reasons why a researcher chooses a stratified
sample: To increase a sample's statistical efficiency;
To provide adequate data for analyzing the various subpopulations, and
To enable different research methods and procedures to be used in different strata.

With the ideal stratification, each stratum is homogeneous internally and heterogeneous with other strata.

The size of the strata samples is calculated with two pieces of information: (I) How large the total sample should be and
(ii) How the total sample should be allocated among strata.

Proportional versus Disproportionate Sampling

In proportionate stratified sampling the number of items drawn from each stratum is equal.
Suppose a researcher needs a sample from a universe of 500 individuals, i.e., n = 500. If she were to select 4 strata i.e., s1, s2, s3, and s4, each would have 125 items. A simple random sample is then selected independently from each group.

In disproportionate sampling, no equal units are drawn but weights are assigned to each stratum. Suppose again the researcher has a sample of 500 which represent income level groups, i.e.:

Income (Ksh) below 5,000 s1 = 0.4 (500) = 200. Income (Ksh) 5,000 – 10,000 = s1 = 0.3 (500) = 150
Income (Ksh) 10,000-50,000 = s3 = 0.2 (500) = 100
Income (Ksh) above 50,000 = s4 = 0.1 (500) = 50

5
0
0

Random samples are taken from within each group in the proportions that each group bears to the population as a whole. The purpose of stratification is to ensure

that the sample mirrors the characteristics of the population. In the case of the study of incomes, by assigning a higher weight to low income groups, the researcher is likely to get a good sample representative.

The main difference between stratified random sampling and simple random sampling is that in the simple random method, sample items are chosen at random from the entire universe, while in the stratified random sampling, the sample items are chosen at random from each stratum.

4. Cluster Sampling

In a simple random sample, each population element is selected individually. The population can also be divided into groups of elements with some groups randomly selected for study. This is *cluster sampling*. An immediate question might be: How does this differ from stratified sampling? They may be compared as follows:

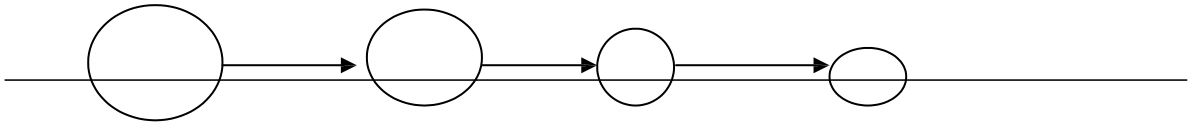
Stratified Sampling	Cluster Sampling
1. We divide the population into a few subgroups each with many elements in it. The subgroups are selected according to some criterion that is related to the variables under study.	1. We divide the population into many subgroups, each with a few elements in it. The subgroups are selected according to some criterion of ease or availability in data collection.
2. We try to secure homogeneity within subgroups and heterogeneity between subgroups.	2. We try to secure heterogeneity within subgroups and homogeneity between subgroups, but we usually get reverse.
3. We randomly choose elements from within each subgroup.	3. We randomly choose a number of subgroups, which we then typically Study into.

When done properly, cluster sampling also provides an unbiased estimate of population parameters. Two conditions foster the use of cluster sampling: (1) the need of more economic efficiency than can be provided by simple random sampling and (2) the frequent unavailability of a practical sampling frame for individual elements.

Statistical efficiency for cluster samples is usually lower than for simple random samples chiefly because clusters are usually homogeneous. Families in the same block (a typical cluster) are often similar in social class, income level, ethnic origin, and so forth.

4.Multi-Stage Sampling

This is a practical system widely used to reduce the travelling time for interviewers and the subsequent costs multi-stage sampling is similar to stratified sampling except the groups and sub-groups are selected on a geographical / location basis rather than some social characteristics. For example: Assume you wanted the opinion of female students from universities on gender equality. You would select your sample as:



All universities ⟶ Public universities ⟶ Students ⟶ Female students

(Female/male)

It involves selecting sample in stages until you have identified your study unit.

Non-Probability Sampling

Any discussion of the relative merits of probability versus non probability sampling clearly shows the technical superiority of the former. In probability sampling,

researchers use a random selection of elements to reduce or eliminate sampling bias. Under such conditions, we can have substantial confidence that the sample is representative of the population from which it is drawn. In addition, with probability sample designs, we can estimate an interval range within which the population parameter is expected to fall. Thus, we not only can reduce the chance for sampling error but also can estimate the range of probable sampling error present.

With a subjective approach like *non probability sampling*, the probability of selecting population elements is unknown. There are a variety of ways to choose persons or cases to include in the sample. Often we allow the choice of subjects to be made by field workers on the scene. When this occurs, there is greater opportunity for bias to enter the sample selection procedure and to distort the findings of the study. Also, we cannot estimate any range within which to expect the population parameter. Given the technical advantages of probability sampling over non probability sampling, why would anyone choose the latter? There are some practical reasons for using these less precise methods.

Practical Considerations

We may use non probability sampling procedures because they satisfactorily meet the sampling Objectives. While a random sample will give us a true cross section of the population, this may not be the objective of the research. If there is no desire or need to generalize to a population parameter, then there is much less concern about whether the sample fully reflects the population. Often researchers have more limited objectives. They may be looking only for the range of conditions or for examples of dramatic variations. This is especially true in exploratory research where one may wish to contact only certain persons or cases that are clearly typical.

Additional reasons for choosing non probability over probability sampling are cost and time. Probability sampling clearly calls for more planning and repeated callbacks to ensure that each selected sample member is contacted. These activities are expensive. Carefully controlled non probability sampling often seems to give a

While probability sampling may be superior in theory, there are breakdowns in its application. Even carefully stated random sampling procedures may be subject to careless application by the people involved. Thus, the ideal probability sampling may

be only partially achieved because of the human element.

It is also possible that non probability sampling may be the only feasible alternative. The total population may not be available for study in certain cases. At the scene of a major event, it may be infeasible to even attempt to construct a probability sample. A study of past correspondence between two companies must use an arbitrary sample because the full correspondence is normally not available.

In another sense, those who are included in a sample may select themselves. In mail surveys, those who respond may not represent a true cross section of those who receive the questionnaire. The receivers of the questionnaire decide for themselves whether they will participate. There is some of this self-selection in almost all surveys because every respondent chooses whether to be interviewed.

Methods

1. **Convenience**. Non probability samples that are unrestricted are called *convenience samples*.

   They are the least reliable design but normally the cheapest and easiest to conduct. Researchers or field workers have the freedom to choose whomever they find, thus the name convenience.Examples include informal pools of friends and neighbors or people responding to a newspaper's invitation for readers to state their positions on some public issue.

   While a convenience sample has no controls to ensure precision, it may still be a useful procedure. Often you will take such a sample to test ideas or even to gain ideas about a subject of interest. In the early stages of exploratory research, when you are seeking guidance, you might use this approach. The results may present evidence that is so overwhelming that a more sophisticated sampling procedure is unnecessary. In an interview with students concerning some issue of campus concern, you might talk to 25 students selected sequentially. You might discover that the responses are so overwhelmingly one- sided that there is no incentive to interview further.

2. **Purposive Sampling**. A non probability sample conforms to certain criteria is

called purposive sampling. There are two major types – *judgment* sampling and *quota* sampling.

a) **Judgment Sampling** occurs when a researcher selects sample members to conform to some criterion. In a study of labor problems, you may want to talk only with those who have experienced on-the-job discrimination. Another example of judgment sampling

Occurs when election results are predicted from only a few selected precincts that have been chosen because of their predictive record in past elections.

When used in the early stages of an exploratory study, a judgment sample is appropriate. When one wishes to select a biased group for screening purposes, this sampling method is also a good choice. Companies often try out new product ideas on their employees. The rationale is that one would expect the firm's employees to be more favorably disposed toward a new product idea than the public. If the product does not pass this group, it does not have prospects for success in the general market.

b) **Quota Sampling** is the second type of purposive sampling. We use it to improve representativeness. The logic behind quota sampling is that certain relevant characteristics describe the dimensions of the population. If a sample has the same distribution on these characteristics, then it is likely representative of the population regarding other variables on which we have no control. Suppose the student body of Mount Kenya is 55 percent female and 45 percent male. The sampling quota would call for sampling students at a 55 to 45 percent ratio. This would eliminate distortions due to a no representative gender ratio.

In most quota samples, researchers specify more than one control dimension. Each should meet two tests: (1) it should have a distribution in the population that we can estimate. (2) It should be pertinent to the topic studied. We may believe that responses to a question should vary, depending on the gender of the respondent. If so, we should seek proportional responses from both men and women. We may

also feel that undergraduates differ from graduate students, so this would be a dimension. Other dimensions such as the student's academic discipline, ethnic group, religious affiliation, and social group affiliation may be chosen. Only a few of these controls can be used. To illustrate, suppose we consider the following:

Gender – two categories – male,
female

Class level – two categories – graduate and
undergraduate

College – six categories – Arts and Science, Agriculture, Architecture, Business, Engineering, other

Religion – four categories – Protestant, Catholic, Jewish,
other

Fraternal affiliation – two categories – member,
nonmember

Family social-economic class – three categories – upper, middle, lower Quota sampling has several weaknesses. First, the idea that quotas on some variables assume representativeness on others is argument by analogy. It gives no assurance that the sample is representative on the variables being studied. Often, the data used to provide controls may also be dated or inaccurate. There is also a practical limit on the number of simultaneous controls that can be applied to ensure precision. Finally, the choice of subjects is left to field workers to make on a judgmental basis. They may choose only friendly looking people, people who are convenient to them, and so forth.

Despite the problems with quota sampling, it is widely used by opinion pollsters and marketing and other researchers. Probability sampling is usually much more costly and time- consuming. Advocates of quota sampling argue that while there is some danger of systematic bias, the risks are usually not that great.

Where predictive validity has been checked (e.g., in election polls), quota sampling has been generally satisfactory.

3. **Snowball.** This design has found a niche in recent years in applications where respondents are difficult to identify and are best located through referral networks. In the initial stage of snowball sampling, individuals are discovered and may or may not be selected through probability methods. This group is then used to locate others who possess similar characteristics and who, in turn, identify others. Similar to a reverse search for bibliographic sources, the 'snowball' gathers a subject as it rolls along.

   Variations on snowball sampling have been used to study drug cultures, teenage gang activities, power elites, community relations, insider trading and other applications where respondents are difficult to identify and contact.

4. **Dimensional Sampling.** The researcher identifies the various characteristics of interest in a population and obtains at least one correspondent for every combination of those factors. It is a further refinement of the quota sampling technique. (i.e., you have a number of features, male/female, so you choose one man to represent the men and one woman to represent the women).

3.11 Resource allocation and budgets

General notions about research budgets have a tendency to single out data collection as the costliest activity. Data collection requires substantial resources but perhaps less of the budget than clients/students will expect. Research assistants must be paid, training and travel must be provided, and other expenses are incurred; but this phase of the project often takes not more than one third of the total research budget. The geographic scope and the number of observations required do affect the cost but much of the cost, is relatively independent of the size of the data- gathering efforts. Thus, a guide might be that:

a. Project planning,

b. D a t a
gathering, and
c. Analysis, interpretation and reporting each share about equally in the budget.

Without budgetary approval, many research efforts are terminated for lack of resources. A budget may require significant development and documentation as in grant and contract research, or it may require less attention as in a student's project or investigations funded out of the researcher's own resources.

3.12 The research approval

A written proposal is often required when a study is being suggested. It ensures that the parties concur on the project's purpose and on the proposed methods of investigation. Times and budgets are often spelled out, as are other responsibilities and obligations. Depending on the needs and desires of the researcher, substantial background detail and elaboration of proposed techniques may be included. The length and complexity of research proposals range widely. Business research proposals normally range from one to ten pages. Applicants for foundations or government research grants typically file a proposal request of a few pages, often in a standardized format specified by the granting agency. With the student's academic research proposal, there is no accepted length but a rule-of-thumb criterion is used to suggest a 20 and 25 page as ideal. Every proposal, regardless of length should include ***two basic sections.***

1. A statement of the research question (problem) and
2. A brief description of research methodology

3.13 Pilot Testing

The data-gathering phase of the research process typically begins with pilot testing. Pilot testing may be skipped when the researcher tries to condense the project time frame.

A pilot test is conducted to detect weakness in design and instrumentation and provide

proxy data for selection of a probability sample. It should therefore draw subjects from the target population and simulate the procedures and protocols that have been designated for data collection. If the study is a survey to be executed by mail, the pilot questionnaire should be mailed. If the design calls for observation by an unconstructive researcher, this behavior should be practiced. The size of the pilot group may range from 25 to 100 subjects depending on the method to be tested, but the respondents do not have to be statistically selected. In very small populations or special applications, pilot testing runs the risk of exhausting the supply of respondents and sensitizing them to the purpose of the study. This risk is generally overshadowed by the improvements made to the design by a trial run.

There a number of variations on pilot testing. Some of them are intentionally restricted to data collection activities. One form, **pretesting** may rely on colleagues, respondent, surrogates or actual respondents for the purpose of refining a measuring instrument. This important activity has saved countless survey studies form disaster by using the suggestions of the respondents to identify and change confusing, awkward, or offensive questions and techniques. Pretesting may be repeated several times to refine instruments and procedures.

RESEARCH INSTRUMENTS

1. The questionnaire

A questionnaire can be defined as a group of printed questions which have been deliberately designed and structured to be used to gather information from respondents.

Advantages of using questionnaire

1. They can be used to reach many people.
2. Save time, especially where they have been mailed to respondents
3. Cost effective given they can be mailed and one can avoid using interviewers.
4. Questions are standardized and therefore the responses are likely to be the same.
5. Interviewer biases can be avoided when questionnaires are mailed.
6. They give a greater feeling of being anonymous an and therefore encourage open responses to sensitive questions.
7. Effective in reaching distant locations where it is not practical to go there.

Disadvantages

1. Questionnaire mailed to respondents may not be returned.
2. The inability to control the context of questioning and specifically the presence of other people who may fill the questionnaire.
3. A certain number of potential respondents, particularly the least educated maybe unable to respond to written questionnaires because of illiteracy and other difficulties in reading.
4. Written questionnaires do not allow the researchers to correct mis-understanding or answer questions that the respondent may have.
5. Source questionnaire may be returned half filled or unanswered.

Guidelines for asking questions.

In the actual practice of social research- variables are usually operational zed by asking people questions as a way of getting for analysis and interpretation. That is always the case in survey research, and such 'self-report' date is often collected in experiments, field research, and other modes of observation. Sometimes the questions are asked by the interviewer, sometimes they are written down and given to respondents for completion (they are called administered questionnaire)

The term questionnaire suggests a collection of questions, but an examination of a typical questionnaire will probably reveal as many statements as questions. That is always the case in survey research, and such 'self-report' date is often collected in experiments. Field research and other modes of observation. Sometimes the questions are asked by the interviewer, sometimes they are written down and given to respondents for completion (they are called administered questionnaire)

The term **questionnaire** suggests a collection of questions, but an examination of a typical questionnaire will probably reveal as many statements as questions. That is not without reason.
Often, the researcher is interested in determining the extent to which respondents hold a particular attitude or perspective. If you are able to summarize the attitude in a fairly brief statement, you will often present that statement and ask respondents whether they agree or disagree with it- Rensis Likert scale, - a format where

respondents are asked to strongly agree, disagree, or strongly disagree, or perhaps strongly approve, approve, and so forth.

Open- ended and closed questions.

Open ended questions.

The respondent in asked to provide his or her own answer to the questions e.g. (what do feel is the most important issue facing Kenya today?). And provided with a space to write in the answer 9 or be asked to report in verbally to an interviewer)

Closed –ended questions

The respondents are asked to select an answer from a list provided by the researcher. Closed – ended questions are very popular because they provide a greater conformity of responses and are more easily processed. Open-ended responses must be coded they can be processed for computer analysis. This coding process often requires that the researcher interpret the meaning of responses, opening the possibility of misunderstanding and researcher bias. There is also danger that some respondents will give answers that are essentially irrelevant to the researcher's intent
Closed –ended questions can often be transferred directly into computer format

The chief shortcoming of closed- ended questions lies in the researcher's structuring of responses. In asking about 'the most important issue facing Kenya, for example, your check- list of issues might omit certain issues that respondents would have said were important.

In the construction of closed-ended questions, the response categories provided should be exhaustive. (They should include all the possible responses that might be expected) – (please specify_____) second, the answer categories must be mutually exclusive; (in some cases you may wish to solicit multiple answers, but these may create difficulties in data processing and analysis later on.)

Make items clear.

Questionnaire should be clear and unambiguous. Often you can become so deeply involved in the topic under examination that opinions and perspectives are clear to you but will not be clear to your respondents – many of whom have given little or no attention to the topic. Or if you have only a superficial understanding of the topic,

you may fail to specify the intent of your question sufficiently. The questions 'what do you think about the' proposed nuclear freeze? 'May evoke in the respondent a counter question: 'which nuclear freeze proposal? Questionnaire items should be precise so that the respondent knows exactly what the researcher wants an answer to.

Avoid Double –Barreled Questions

Frequently, researchers ask respondents a single answer to a combination of questions. That seems to happen most after when the researcher has personally identified with a complex question. For example, you might ask respondents to agree or disagree with a statement. The United States should abandon its space program and spend the money on domestic programs' although many people would unequivocally agree with the statement and others would unequivocally disagree, still others would be unable to answer. Some would want to abandon the space program and give the money domestic programs. These latter respondents could neither agree nor disagree without misleading you.

Respondents must be competent to answer.

In asking respondents to provide information, you should continually ask yourself whether they are able to do so reliably. In the study of child rearing, you might ask respondents to report the age at which they first talked back to their parents. Quite aside from the problem of defining talking back to parents, it is doubtful if most respondents would remember with any degree of accuracy.

One group of researchers examining the driving experience of teenagers insisted on asking an open ended question concerning the number of miles driven since receiving a license. Although consultants argued that few drivers would be able to estimate such information with any accuracy, the question was asked nonetheless. In response, some teenagers reported driving hundreds of thousands of miles'

Questions should be Relevant

When attitudes requested on a topic that few respondents have thought about or really care about, the results are not likely to be very useful. This point is illustrated occasionally when you ask for responses relating to fictitious persons and issues. In a potential poll conducted, respondents were asked whether they were familiar with each of 15 political figures in the community. As a methodological exercise, a name was made up: John Mania. In response, 9% of the respondents said they were familiar with him. Of those respondents familiar with him, about half reported seeing him on television and reading about him in the newspapers.

When you obtain responses to fictitious issues, you can disregard those responses. But when the issue is real you may have no way of telling which responses genuinely reflect attitudes and which reflect meaningless answers to irrelevant questions.

Short Items are Best

In the interest of being unambiguous and precise and pointing to the relevance of an issue, the researcher is often led into long and complicated items. That should be avoided. Respondents are often unwilling to study an item in order to understand it. The respondent should be able to read an item quickly, understand its intent, and select or provide an answer without difficulty. Provide clear, short items that will not be misinterpreted under those conditions.

Avoid Negative Items

The appearance of a negative item in a questionnaire paves way for early misinterpretation. Asked to agree or disagree with the statement. 'The United States should not recognize Cuba', a sizeable portion of the respondents will read over the word not and answer on that basis. Thus, some will agree with when they oppose it. Any you may never know which is which.

Avoid Biased Items and Terms

The meaning of some one's response to a question depends in large part on the wording of the question that was asked. That is true of every question and answer. Some questions seem to encourage particular responses more than other questions. Questions that encourage respondents to answer in a particular way are called biased. Most researchers recognize the likely effect of a question that begins 'don't' you agree with the president that…' And no reputable researcher would use such an item. Unhappily the biasing effect of items and terms is far subtler than this example suggests.

The mere identification of an attitude or position with prestigious person or agency can bias responses. The item 'do you agree or disagree with the recent supreme court decision that…' would have similar effect. It does not mean that such wording will necessarily produce consensus or even a majority in support of the position identified with the prestigious person or agency, only that support would likely be increased over what would have been obtained without such identification.

Questionnaire items can be biased negatively as well as positively. 'Do you agree or disagree with the position of Adolf Hitler when he stated that…' is an example. Since

1949, asking Americans questions about China has been tricky. Identifying the country as 'China' cans still result in confusion between mainland China and Taiwan. Not all American recognize the official name: The People's Republic of China. Referring to 'Red China' or Communist China' evokes negative response from many respondents, though that might be desirable if your purpose were to study anti communist feelings.

Questionnaire Construction

Questionnaires are essential to and most directly associated with surveys research. They are also widely used in experiments, field research, and other data-collection activities. Thus questionnaires are used in connection with modes of observation in social research.

Response Strategies Illustrated

The characteristics of respondents, the nature of topic(s) being studied, the type of data needed, and your analysis plan dictate the response strategy. Example of the strategies described below are found in Table 10.1

Free-Response Questions: also known as open-ended questions, ask the respondent a question, and the interviewer pauses for the answer (which is unaided), or the respondent records his or her ideas in his or her words in the space provided on a questionnaire.

Dichotomous Response Questions: A topic may present clearly dichotomous choices: something is a factor it is not; a respondent can either recall information; a respondent attended or didn't attend an event.

Multiple-Choice Questions: are appropriate where there are more than two alternatives or where we seek gradations of preference, interest, or agreement; the latter situation also calls for rating questions. While such questions can be efficient, but they also present unique design problems.

Table 10.1

Alternative Response Strategies

Free response — what factors influenced you're your enrollment in Metro U

Dichotomous Selection — Did you attend either of the "A Day at college" Programs At? KEMU

☐ Yes ☐ No

(Paired comparison Dichotomous selection) — in your decision to attend KEMU, which was more influential; the *semester, calendar or the many friends attending from your home town.*

☐ Semester Calendar
☐ Many friends attending from home town

Multichoice — Which one of the following factors was in your decision to attend KEMU?

☐ Good academic reputation
☐ Specific program of study
☐ Enjoyable campus life
☐ High quality of the faculty
☐ Many friends from home attend

Checklist — Which of the following factors encouraged you to apply to KEMU? (Check all that apply)

☐ Tuition Cost
☐ Specific program of study desired
☐ Opinion of brother or sister
Many friends from home

Rating each of the following factors has been shown to have some influence on a student' choice in applying KEMU. Using your own experience for each factor please tell

us whether the factor was strongly influential. 'Somewhat influential' or not all influential'

	Strongly Influential	Somewhat Influential	Not at all Influential
Good academic reputation	☐	☐	☐
Enjoyable campus life	☐	☐	
Many friends from home attend	☐	☐	☐
High quality of the faculty	☐	☐	
Semester calendar	☐		

Ranking Please rank – order your top three factors from the following list based on their influence in encouraging you to apply to KEMU. Use 1 to indicate the most encouraging factor, 2 the next most encouraging factor, etc.

_____Closeness to home
_____Enjoyable campus life
_____Good academic reputation
_____High quality of the faculty
_____High school councilor's recommendation
_____Many friends from home
_____Opinion of brother or sister
_____Parent's preferences
_____Specific program of study desired
_____Tuition cost.

Checklist strategies

When you want a respondent to give multiple responses to a single question, you will ask the question in one of three ways. If relative order is not important, the checklist is the logical choice. Questions like 'which of the following factors encouraged you to apply to KEMU, using your own experience, for each factor please tell us whether the factor was ' strongly influential', somewhat influential' or 'not at all influential' Generally, rating-scale structures generate ordinal data; some carefully crafted scales generate interval data.

Rating Strategies

Rating questions ask the respondent to position each factor on a companion scale, verbal, numeric, or graphic, each of the following factors has been shown to have some influence on a students' choice to apply to KEMY. Using your own experience, for each factor please tell us whether the factor was 'strongly influential' somewhat influential' or 'not all influential', generally, rating-scale structures generate ordinal data; some carefully crafted scales generate interval data

Ranking strategies

When relative order of the alternatives is important, the ranking question is ideal. 'Please rank- order your top three factors from the following list based on their influence in encouraging you to pay KEMU. Use 1 to indicate the most encouraging factor, 2222 the next most encouraging factor, etc. the checklist strategy would provide the three factors of influence, but we would have no way of knowing the importance the respondent places on each factor. Even in a personal interview, the order in which the factors are mentioned is not guarantee of influence. Ranking as a response strategy solves this problem.

Instructions

Instructions to the interviewer to respondent attempt to ensure that all respondents are treated equally, thus avoiding building error into the results. Two principles form the foundation for good instructions: clarity and courtesy. Instruction language needs to be unfailingly simple and polite.

Instruction topics include (1) how to terminate an interview when the respondent does not correctly answer the screen or filter questions. (2) How to conclude an interview when the respondent decides to discontinue, (3) skip directions for moving between top sections of an instrument when movement is dependent on the answer to specific questions or when branched questions are use, and (4) telling the respondent to a self-administered instrument about the disposition of the survey instrument. Personal interviewer instructions sometimes are in a document separate from the questionnaire (a document thoroughly discussed during interview training) or are distinctly and clearly marked (high-lighted, printed in a colored ink, or boxed on the computer screen) on the data collection instrument itself)

Conclusion

The role of the conclusion is to leave the respondent with the impression that his or her participation had been valuable. Subsequent researchers may need this individual to participate in new studies. If every interviewer or instrument expresses appreciation for participation, co-operation in subsequent studies is more likely

RESEARCH METHODS

Review Questions.

1. What are the main advantages associated with obtaining information by questioning or by observation?

2. Distinguish among response error, interviewer error, and non response error.

3. How do environmental factors affect response rates in personal interviews? How can we overcome these environmental problems?

4. A major corporation agrees to sponsor an internal study on sexual harassment in the workplace. This is in response to concerns expressed by their female employees. How would you handle the following:

   a) sample collection

   b) the communication approach (self-administered, telephone, personal interview, mixed)

   c) The purpose: fact finding, awareness, relationship building and change.

   d) Minimization of response and no response error.

5. Distinguish between

   a) Direct and indirect questions.

   b) Open- ended and closed questions.

6. One design problem in the development of survey instruments concerns the sequence of questions. What suggestion would you give to people designing their first questionnaire?